

CALIFORNIA STATE SCIENCE FAIR

2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)**Matthew J. Mason****Science Fair Use Only****J0813****Project Title** (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)**S.O.S : Save Our Soil****Division****J Junior (6-8) J Senior (9-12)****Preferred Category** (See page 5 for descriptions.)**7 - Environmental Biology****Abstract** (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Objective: The object of this is to determine which ground covers have better control of solid erosion.**Material and methods:** Frame: Plywood; wooden stakes; sledge hammer; shovel; garden rake; wheel barrow; dividers; lever; & protractor**Experiments:** Solid/sand mix, graduated bucket, aluminum trays, gram scale, & collection jars 1 piece of Tall Fescue sod & 1 flat each of Rosea Ice Plant and Needle Point Ivy (for experiment # 1) Plus 1 flat each of red spice Ice Plant, Vinca, and Ornamental Strawberry (for experiment # 2). Dense, medium-dense, and loose ground covers were tested to determine which ground cover provided the best control of erosion. A control group was set up with no ground cover to measure the amount of erosion that would occur naturally. Equal size ground covers were planted and watered daily to get established. The variables for both control and the experimental Groups were controlled by having the same location, amount and type of soil, slope, trays for collecting eroded soil, daily watering, and amount of measurement. After the ground covers were established I collected, weighed, and recorded the amount of eroded soil from each tray daily, using a gram scale. I tested the ground covers in this manner for 4 weeks.**Results:** the control Groups, which had no ground cover, consistently lost a much greater amount of soil than all groups with ground covers. The Rosea Ice Plant was the cover most effective at preventing soil erosion. It was 50 times more effective than control Group 1. Even the least effective ground cover, the Needle Point Ivy was 1.9 times more effective than the Control Group. **Conclusion:** Ground covers-especially those with roots that bind - form an important control for soil erosion. Wind and water erosion cause problems for farms, businesses, and individuals through uprooted crops, compacted soil, dust in our air, mud slides, and sediment and pollutants which are carried into our lakes and rivers. Therefore, it is important to use ground covers in farming, along our freeways, and at our homes to better protect our environment and our future.**Summary Statement** (In one sentence, state what your project is about.)

Tested ground covers to determine which ground cover best controls soil erosion.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

Mother drove me to get supplies. Materials and photographs from R. Ramirez, soil conservationist.